

Revised Ph.D. Coursework Syllabus Structure w.e.f. 2024-25

	Duration	Credits	Teaching Pedagogy
Pre-Ph.D. Coursework	1 Semester	12	Through lectures, seminars, workshops, MOOCs, etc.

Papers	Title	Evaluation Parameters	Evaluation (in %)	Marks	Credits
I	Research Methodology	Assignments /workshops/quiz / Presentations, and a Written Final Examination	50 UE + 50 IE	100	4
II	Recent Advances in the concerned specialization (HR/Finance/Marketing Applied Management Sciences/Computer Applications)	Assignments/ quiz / Presentations, Survey Report / Term paper / Research Publications etc., and Written Final Examination	50 UE + 50 IE	100	4
III	Presentation of Proposed Research Work	<ul style="list-style-type: none"> • Seminar I presentations Review of literature (2 credits) • Seminar II presentation - Synopsis for Topic approval (2 credits) 	50 UE + 50 UE	100	2
IV	Research and Publications Ethics (RPE)	Assignments, workshops/quiz / Presentations	50 UE + 50 UE	50	2
			Total credits		12

Preamble:

The Pre-Ph.D. coursework will comprise of 14 credits and span a minimum duration of six months. Teaching pedagogy would be classroom teaching, MOOCS, seminars, presentations, etc. The mode of evaluation for courses will be University evaluation. The credits assigned to Ph.D. coursework shall be as follows with one credit equals to 15 clock hours of teaching.

The Pre-Ph.D. Syllabus comprises of four papers as follows:

Paper No.	Title	Credits
I	Research Methodology	4
II	Recent Advances in the concerned specialization (HR/Finance/Marketing Applied Management Sciences/Computer Applications)	4
III	Presentation of Proposed Research work	4
IV	Research and Publications Ethics (RPE)	2
		12

Note:

1. Marking of Paper I and II: 50 (UE): 50 (IE) patterns of evaluation.

Continuous Evaluation System (CES) for 50 marks can be as follows:

10 marks: Class Participation

40 marks: Assignments/ Presentation

Written University Examinations in Paper I and Paper II will be 50 marks each.

UGC 10-point be used for the computation of the marksheet as per UGC Guidelines.

Question Paper Format:

PAPER – 1 - RESEARCH METHODOLOGY & STATISTICS (Common to all) - 50

Marks SECTION (A) - RESEARCH METHODOLOGY - 25 Marks

SECTION (B) STATISTICS - 25 marks

Total Marks: - 50 Marks

Duration: - 2 hours

Minimum Pass percentage of Marks: 50% (In each section)

PAPER II - RECENT ADVANCES IN CONCERNED SPECIALITY; (In the areas of MARKETING, FINANCE, HUMAN RESOURCES & APPLIED MAAGEMENT SCIENCES)

Total Marks: - 50 Marks

(10 Questions 5 Marks)

Duration: - 2 hours

Minimum Pass percentage of Marks: 50% (In each section)

2. Evaluation of Paper – III

Presentation of Proposed Research work

The Presentation of research topic by the candidate will be evaluate will be evaluated by an Expert Committee. The Candidate will be required to make a presentation under the following headings.

1. Title of the Topic
- 2 Need for the study
- 3 Literature review
- 4 Research Questions
- 5 Objectives
- 6 Possible outcome
- 7 Beneficiaries

He / she will also be required to provide a brief report (10 sets) of the contents of the presentation (not Exceeding 10 pages) to the members of the Committee.

The Expert committee will be constituted by the Vice-Chancellor on the recommendation of the dean of the Concerned Faculty.

Total Marks: - 50 Marks

Duration: 15 minutes to each candidate

Minimum Pass percentage of Marks: 50%

Note: The student should obtain a minimum of 55% Marks (Aggregate) in order to be declared passed in the Pre-Ph. D. Examination

3. Evaluation of Paper IV

Research and Publication Ethics (RPE):

Total Marks for the Subject: 50 marks

Evaluation Pattern: 25 (UE) + 25 (IE)

Continuous Evaluation System (CES) for 25 Internal Evaluation:

15 marks: Assignments/ Quiz/ Presentation, etc.

10 marks: Paper Publication

Question Paper Pattern for University Evaluation:

Total number of questions to be attempted 5 out of 7 questions of 5 marks each question.

RESEARCH METHODOLOGY- Paper-I Pre-Ph. D. Syllabus

(5 Questions 5 Marks each)

Unit –I Objectives and types of research

Motivation and objectives - Research methods vs Methodology, Research Process and Research Approach

Types of research – Descriptive vs Analytical, Applied vs. Fundamental Quantitative vs Qualitative, Conceptual vs Empirical. **- 4 Hours**

Unit – II - Research Formulation

Defining and formulating the research problem – Selecting the problem – Necessity of defining the problem – Importance of literature review in defining a problem – Critical literature review, Identifying gap areas from literature review, Pilot Study – Requirement of Pilot Study – Validity and Reliability – Development of working hypothesis. **- 5 Hours**

Unit – III - Research design and methods

Research design – Basic Principles – Need of research design – Features of good design – Important concepts relating to research design. Types of Research Design – Exploratory, Descriptive, Casual and Experimentation - Basic Principle of Experimental Design, Issue of Assignment. **- 5 Hours**

Unit – IV – Data Collection and analysis

Execution of the research – Observation and Collection data – Methods of data collection – Primary Data - Questionnaire and Interview Technique – Collection of Primary data using “Google Drive” for web based Questionnaire, Collection of Secondary Data – Cases and Schedules – Sampling Methods, Data Processing and Analysis strategies – Data Analysis with Statistical Packages – Hypothesis- testing – Generalization and Interpretation. **- 5 Hours**

Unit V – Research Paper writing and Thesis writing

Structure and components of scientific reports – Types of report – Technical reports and thesis Significance – Different steps in preparation - Layout, structure and Language of typical Reports – Illustration and tables – Layout of Research Paper for National and International Publications, Bibliography, APA format – Books, Research Papers, Journals, Magazines, referencing web pages and footnotes in Literature Review – Annexure Oral presentation - Planning – Preparation – Practice – Making presentation – Use of visual aids – Importance of effective communication. **- 5 Hours**

Unit VI – Application of results and ethics

Environmental impacts – Ethical issues – Reproduction of published material – Plagiarism – Citation and acknowledgement – Reproducibility and accountability. **- 2 Hours**

TEXTBOOKS

1. Cooper, D. R., & Schindler, P.S. (2006) Business Research Methods, 9th Edition: TATA McGraw-Hill Publishing Co. Lts., New Delhi
2. Krishnaswamy, K.N., Sivakumar, A.I., & Mathirajan, M. (2006) Management Research Methodology. 1st Edition. Dorling Kindersley (India) Pvt. Ltd., Delhi
3. Malhotra, N. K., & Dash, S. (2011), Marketing Research: An Applied Orientation, 6th Edition, Dorling Kindersley (India) Private Ltd., Delhi

STATISTICAL TECHNIQUE

(5 Questions 5 Marks each)

Unit-I- Sampling of research

Sampling – Meaning, Steps in sampling, Criteria for selecting sample, Characteristics of good sample, Sample size determination – Probability and Non-Probability sampling methods, Parametric and Non-Parametric sampling. Univariate and Bivariate. **- 6 Hours**

Unit II – Scaling Technique

Measurement and Scaling – Scaling techniques – Forecasting techniques Time Series Analysis – Regression and co-relations. Testing of Significance, Goodness of Fit. **- 4 Hours**

Unit III – Descriptive Statistics

Simple random Sampling, Systematic Sampling, Stratified Sampling, Cluster Sampling, Convenience Sampling, Snowball Sampling, Quota Sampling. Descriptive Statistics – Tabulation, Organization and Graphical representation of quantitative data. Measures of central tendencies: Mean, Median and Mode Measures of Variability: Range – Q.D; S.D; A.D; and coefficient of Variation – Measures of Relative Position: Percentile Ranks. **- 6 Hours**

Unit – IV – Testing of Hypothesis

Testing of Hypotheses – Procedure for Hypotheses Testing, Single Population, two population means. Use of Statistical Techniques for testing of hypotheses – z, t, Chi-square, and F Test. **- 6 Hours**

Unit – V – Analysis of Variance (ANOVA)

Sampling Errors; Analysis of Variance (ANOVA), one way ANOVA, Two-way ANOVA, co-variance – Multi Variate Analysis and Factor Analysis – Use of Cluster Analysis. **- 6 Hours**

Unit – VI – Application of results and ethics

Use of computer in Research – Creating a Database and its use for Statistical Analysis, SPSS, Excel & Advance Excel, Quantitative Methods for Windows. **- 6 Hours**

Reference Books:

1. Introduction to the Practice of Statistics by David S. Moore, George P. McCabe, and Bruce A. Craig
2. Statistics by Freedman, Pisani, and Purves

PRE-PH. D. SYLLABUS FOR PAPER – II
ADVANCED TOPICS IN MARKETING MANAGEMENT
(For Marketing Specialization Scholars)

(10 Questions - 5 Marks each)

Objectives:

To make scholars get acquainted with the advanced topics in the area of Marketing Management before they start their research work in this field. This syllabus will prepare the scholar for understanding the more complicated concepts in Marketing.

UNIT – 1:

Marketing: Meaning significance, core concepts, needs, wants, demand market – its meaning and classification – Marketing management – meaning and functions, marketing organization and types.

Marketing environment Meaning – constitutions of Indian Marketing Environment/ internal forces – controllable and uncontrollable factors influencing decision-making, Concept of market potential & market share.

Consumer Behavior: Factors influencing buyer behaviour – Buyer decision processes- Consumer Psychology- Industrial Buyer behaviours Vs Domestic Buyer-Consumers satisfaction Vs Customer delight- Customer value & satisfaction.

Market segmentation: Bases for market segmentation of Consumer goods, industrial goods and services, Marketing Targeting and positioning strategies.

Sales Forecasting – Methods: Marketing Research – Scopes, Obstacles in acceptance

- 15 Hours

UNIT – II:

Marketing Mix: Concepts and Components, Products Meaning, Characteristics, Classification Pricing – Meaning, Objectives and Methods of pricing distribution system, meaning and types of channels of distribution Promotion - meaning and elements of promotion mix-Definition of each of 4 P's s-significance.

New Product Decision process; Types of New Products-Test marketing a new product Branding Definition, Purpose, and significance – packaging- Purpose, Types and new Trends in packaging.

- 15 Hours

UNIT – III:

Service Marketing: Meaning/Classification of Service/Importance, Characteristics, Implications.

Advance Concepts & Cases in Marketing

Marketing Planning: Concept, Developing marketing plan for variety of goods &

UNIT – IV:

Marketing Organization: Concept, Type, Product focused Organization, Geographic Organization, Customer based Organization, Matrix Organization, Organization structure for a wide customer orientation.

Marketing Evaluation & Contract: Social responsibility of marketing organization - **15 Hours**

Books Recommended:

- 1 Keller Kevin lane, Kotler Philip, Marketing Management, Pearson Education, 13th Edition, 2009
- 2 V S Ramaswamy, S. Namakumari, Marketing Management, Macmillan, 4th Edition, 2009
- 3 Joel R. Evance, Barry Berman, Marketing Management, Cengage Learning, 8th Edition 2008
- 4 Arun Kumar, N, Menakshi, Marketing Management, Vikas Publication, 1st Edition 2008
- 5 Roger J. Best, Marketing Management, Pearson Education, 5th Edition 2009
- 6 Kazmi, Marketing Management, Excel Book, 1st Edition 2007
- 7 Tapan Panda, Marketing Management, Excel Book, 2nd Edition 2008

PRE-PH. D. SYLLABUS FOR PAPER - II
ADVANCED TOPICS IN HUMAN RESOURCE MANAGEMENT
(For Human Resource Management Specialization Scholars)

UNIT – I:

Evolution of HRM: Management and administration and the difference Human Resource Management / Personnel Management – Concept, nature, aim, objective, scope and historic perspective and evolution of HRM / PM in India

Human Resource Management/Personnel Department: - Its function and Organization. Characteristics, qualities, and profile of HRM/PM: - Role of HRM/PM

Manpower Planning: Objectives & Methods of manpower planning, Demand Forecasting, Supply Forecasting analyzing the manpower planning & Importance, Succession Planning and its Benefits.

Manpower Procurement: Recruitment: Difference between Recruitment, Selection & Placement, Objectives & Methods of Recruitment, Poaching, Raiding, Recent trends of Recruitment.

Selection: - Selection as a technique of Successive Hurdles, Methods and process, Selection Test: - Standardization, Validity & Reliability, Psychological Testing & its importance, Placement & Induction programmes. **- 15 Hours**

UNIT – II:

Career Planning and Development: Career planning, its objectives & Importance, Coaching & Counseling, Performance Appraisal – Need & Importance, Traditional Performance Appraisal Methods, Modern – Performance Behavioral Anchored Rating Scale (BARS), 360 Degree – Performance Appraisals, Self-Evaluation – KRAs & KPAs, Assessment Centers, Balanced Score Cards, 720 degree appraisal, Pitfalls In Performance Appraisals – Feedback & counselling Potential Appraisal – Techniques and Methods of Promotion Policy, Transfer, Demotion its necessity & importance.

Training and development: Learning: - Pedagogy & Andragogy, Adult Learners, Training Concepts, Difference Between Education, Training & Development- Objectives & Methods of Training, Assessment of Training Needs, Steps of Training Process. Designing of Training Schedule & Its complete process. Evaluation & Feedback on Training to measure its effectiveness, Management Development Programmes: - Concept & Steps & its necessity for managerial personnel. **- 15 Hours**

UNIT – III:

Compensation Management : Concepts & Component of Compensation Management – Job Evaluation – Incentives & Benefits, Concept of Remuneration & Factors of compensation, Types of Wages & Wage settlement with Union (Collective Bargaining), Individual Compensation package (Salary & its types), Reward patterns – Traditional & Modern rewards,

Impact of Income Tax, Modern approach to compensation (New Trends), Retirement/Separation-Superannuation-Voluntary Retirement Schemes-Resignation-Discharge-Productivity Management-Concepts-TQM-Kaizen-Quality Circles.

Industrial Relations: Industrial Relation- Concept & Subject Matters, modes of IR, Industrial Disputes, Causes, Prevention & Settlement of Industrial Disputes, Grievance Procedure-collective bargaining, Worker Participation Management, Conciliation, arbitration & Adjudication, Recent Trends of IR, **Social Security** –concepts, Social Insurance & Social assistance, Labour Welfare – Approaches of Labour Welfare, Intra mural & Extra Mural Benefits. **- 15 Hours**

UNIT – IV:

International Human Resource Management

Human Resource in a comparative perspective, International Recruitment and Selection
International Recruitment, International Selection

Cultural Factors/ Issues in performance Management: Developing International Staff and Multinational Teams, Managing Global, Diverse workforce, Approaches to International Compensation, Repatriation, H.R. Issues in MNGs and corporate Social Responsibility

Recent Trends in HRM: Impact of Globalization, Liberalization & Privatization, Work force Diversity, Cross Cultural Teams, Scarcity of Talent, Human Resources Matrix Management, Balanced Scorecard, Outsourcing HR, Talent management & Retention, Work Life balance, Knowledge Management, Competency Mapping **- 15 Hours**

Textbooks:

1 Human Resource & Personnel Management 7th ed – Aswathappa, TMH

Reference Books:

- 1 International Human Resource Management 4th ed – Peter Dowling & Denice Welch, Excel Books
- 2 Personnel and Human Resource Management – A M Sarma, Himalaya Publishing 3
Human Resource Management 10th ed – R Wayne Mondy, Pearson
- 4 Human Resource and Personnel Management Text and Cases 4th ed - K Aswathappa, TMH
- 5 Personnel Management Text and Cases 30th ed – CB Mamoria & V S P Rao, Himalaya
- 6 Personnel Management 6th ed – Edwin Flippo, TMH

PRE-PH. D. SYLLABUS FOR PAPER – II
ADVANCED TOPICS IN FINANCIAL MANAGEMENT
(For Finance Specialization Scholars)

(10 Questions - 5 Marks each)

Objectives:

To make the scholars get **acquainted** with the advanced topics in the area of Financial Management before they start their research work in the field. This syllabus will prepare the scholars for understanding the more complicated concepts and methods of financial Planning, Analysis, Valuations, and global financial scenario.

UNIT – I: INTRODUCTION

1 Introduction to Financial Management:

Evolution of Finance as a discipline, Interface with other disciplines of management, Scope, Limitations, and function of Finance, Objectives of Wealth Maximization, Agency Theory, and its effects

2 Organization of Finance Function: Forms of Business Organization and Financial Management

3 Financial Statement Analysis: The P & L Statement, the Balance Sheet and the Cash Flow Statement, the profitability, liquidity, solvency Ratios, Analysis of the Shareholding and investing community related information, the common-size, Horizontal and vertical analysis of the financial statements and the problems associated with the financial statements at the introductory level.

4 The preparation of Cash flow Statements: The concept of Cash Flow Statement and the distinction between the Accrual and Cash based statements, the meaning and usefulness of statement of Changes in the financial Position (SCFP) based on Cash, Working Capital and Total Resources **- 15 Hours**

UNIT – II: Financial Management

1 The Introductory Financial planning and Budgeting: Projected Financial Statement and the assumptions behind them, Various types and methods of preparation of Budgets: The Relationship between the Additional Funds Needed (AFN) and the Growth Rates at the introductory level.

2 Introduction to the time Value of Money: The concept of Discounting and Compounding The concept of Annuities, The Use of Present and future Value Tables with examples for applied understanding.

3 Fundamentals of Working Capital Mgt. The meaning importance and usefulness of the Operating cycle and its relationship with Working Capital, Factors affecting the

determination of working capital requirements, The Gross and the Net Working Capital, The determination of working capital requirements and their financing, A brief discussion on the management of Current Assets and liabilities like Cash, Accounts Receivables, Inventories, and Accounts Payables.

- 4 The Basis of Capital Budgeting:** The importance of Capital Expenditure Analysis, the factors impacting the Capital Expenditure Analysis, the principles of capital budgeting, the determination of Initial, Operating and Terminal Cash Flow, A brief discussion of non-discontinued and discontinued evaluation tools and techniques and their limitations without in-depth treatment **- 15 Hours**

UNIT – III: FINANCIAL ANALYSIS, PLANNING & CONTROL

1 Financial Analysis Using Advanced Management Accounting Techniques

Contribution Analysis, Break even Analysis, Profitability Analysis **- 15 Hours**

2 Financial Analysis of statement with Ratio Analysis

UNIT – IV: GLOBAL FINANCIAL ANAGEMENT

- 1 Study of Global Finance Management:** Motives of World Trade and Foreign Investments, economic motives for companies to sell their goods and services to foreign customers, Benefits of open trade and reasons for protectionism.
- 2 International financial Transactions:** International Financial Markets, Eurocurrency interbank market, functions, risks, and minimum standards of international banks, international bond market, international equity market along with privatization
- 3 International Banking operations and country risk analysis,** foreign banking offices, Interbank clearing house system, international debt crisis of 1980s, its causes, and possible solutions, Asian financial crisis of 1997, its causes, and policy responses
- 4 Financing Foreign Trade:** Factoring and Forfeiting, A real time forfeiting transaction.
- 5 Financing Foreign Investments;** The internal sources of funds for financing foreign Investment **- 15 Hours**

Prescribed Textbook:

- 1 Financial Management:** Text, Problems and Cases – By M.Y.Khan & P.K.Jain – 6th Edition (Published by Tata McGraw-Hill)
- 2 Advanced Management Accounting** by Ravi Kishor

Other useful Reference Books:

- 1 Fundamentals of financial Management:** Van Horne, James C. And John M. Wachowicz. 9th edition, Prentice Hall
- 2 Fundamentals of Financial Management:** Chandra, Prasanna, 3rd edition, Tata McGraw- Hill
- 3 International Financial Management –** by Madhu Vij – excel books.
- 4 International Finance and Trade –** ICFAI publication – 2 volumes.

PRE-PH. D. SYLLABUS FOR PAPER - II

APPLIED MANAGEMENT SCIENCES SPECIALISATION

UNIT 1:

Technology Management, Behavioral Economics, Knowledge Management, Decision Support System, Management of Creativity and Innovation, Database Management System, Business Intelligence, Business System Analysis and Design, Software Project Management for Enterprise. **- 12Hours**

UNIT 2: Role and Scope of Production Management, PERT/CPM, Advanced Operations Research, Scope of Operations Research, Channel Management, Time and Motion Study, Transportation Model, Inventory Control, Queueing Theory, Decision Theory, Markov Analysis. **- 12 Hours**

UNIT 3: Cross-Cultural Management, Marketing Research, Intellectual Property Rights, Enterprise Resource Planning, Managing for Sustainability, Social Entrepreneurship. **- 12 Hours**

UNIT 4: Corporate Governance and Social Responsibility of Business, Fundamentals of Health Care Administrations and Hospital Enterprise Management (HEM) , Healthcare Policies and Regulations, Basic Economics and Healthcare Economics, Concept of Epidemiology, Healthcare Legislation and Medico-Legal Issues. **- 12 Hours**

UNIT 5: Agriculture input and output marketing environment, New Trends, Market structure, competition, Government intervention in agricultural inputs and outputs marketing, Buyers/users behaviour, Market Segmentation, Advancements in 4 Ps strategies, Evaluation of marketing costs and efficiencies, WTO and Indian Agriculture. **- 12 Hours**

Books Recommended:

1. Essentials of Health Care Marketing- Eric N Berkowitz (Third Edition)
2. Operations Management by William J. Stevenson (Fifth Edition)
3. Introduction to Information Technology- V. Rajaraman (Third Edition)
4. Hospital security- Russell Colling (Third Edition)
5. International Business: Strategy, Management, and the New Realities- Cavusgil S, Gary Knight, and John R. Risenberger (Fifth Edition)

PRE-PH.D. SYLLABUS FOR PAPER - 2
ADVANCED TOPICS STRATEGIC MANAGEMENT
(For General Management Scholars)

(10 Questions - 5 Marks each)

Objectives:

- 1 To expose participants to various perspectives and concepts in the field of Strategic Management
- 2 To help participants achieve conceptual clarity.
- 3 To help participants develop strategic tools & skills for applying these concepts to the solution.
- 4 To gain strategic insights and working with them to deal with an increasingly uncertain world.

UNIT – I:

Introduction to Strategic Management: Definition, nature & importance of Strategic Management, Schools of thought in Strategic Management, Basic Concept of vision, Mission, Business Definition, Strategy, Structure etc. Industry structure and Strategic Leverage concept of Corporate Strategy, Dimensions, and levels of strategy.

Competitive Strategy: Five Forces that shape strategy – Industry analysis, Generic strategy, Strategies for specific Industries, Understanding the earlier Strategy Model of Igor Ansoff in the light of these later developments. **- 15 Hours**

UNIT – II:

Process of Strategy Formulation: Standard Model for Strategy formulation, Situation Analysis – Scanning of the Environment, PESTEL Exercise & SWOT-based Strategy Options: SO/ST/WO/WT, Organizational appraisal, Organizational capability factors, Considerations in organizational appraisal, Methods of organizational appraisal, Agent Model for Strategy formulation – Gap Analysis.

Corporate Strategy (Diversification & Integration): Differences between “Tactics” & “Strategy”, Diversification Strategies: Concentric, Conglomerate, and Horizontal Diversification, Vertical Integration Strategies, forward (Downstream). Horizontal Integration Strategies. **- 15 Hours**

UNIT – III:

Corporate Strategy (Intensive & offensive strategies): Intensive Strategies: Market Penetration, Market Development, Product Development, Offensive Strategies: Retrenchment, Divesture, Liquidation, Defensive Strategies,

Analytical Framework for Strategy Formulation: Input Stage: Internal Factor Evaluation Matrix, External Factor Evaluation Matrix, Competitive profile Matrix, Matching Stage: SPACE Matrix, BCG Matrix, Internal-External Matrix, Grand Strategy, Issue of Implementation, Dupont Framework – Tactical choices. **- 15 Hours**

UNIT – IV:

Recent Advances: Core Competencies – the roots of competitive advantage: Business Processes and capabilities - based approach to strategy, blue ocean Strategies:

Strategy implementation: Structure, Systems and People: Model as interpreted by McKinsey, the 7_5 Framework, Strategy Implementation & Evaluation – an overview through the 7 S framework, framework will form one part of the input- the rest of the input will be to explore the linkages among the above three dimensions. **- 15 Hours**

Textbook:

1 Strategic Management and Business Policy – Azar Kazmi, Tata McGraw-Hill (2008)

Reference Books:

- 1 Strategic Management Concept and Cases: Thomson and Strickland-News - Edition
- 2 Strategic Management Formulation, Implementation and Control by Pearce, Robinson & Mittal, McGraw-Hill, 12th edition.
- 3 Concepts in Strategic Mgt. & Business Policy by Wheelen, Hunger & Rangarajan (Pearson Education No.9 – New – Edition)
- 4 Textbook of Strategic M Strategic Management and Business Policy – t-U.C. Mathur, Macmillan-New-Edition
- 5 Strategic Management Concept and Cases- Upendra Kachru, Excel Books – New-Edition
- 6 Strategic Management- a South Asian Perspective, 9th Edition – Michael A. Hitt, R. Duane Ireland and Robert E. Huskisson – Cengage Publication
- 7 Strategic Management Concept and Cases – Fred R. David, Prentice-Hall – New Edition
- 8 Competitive Strategy by Abhijit Nag.
- 9 Competitive Strategy by Gary Hamel and CK Prahalad – Harvard Business Press
Supplementary Reading: IN SEARCH OF EXCELLENCE: Lessons from America’s Best Run Companies – Thomas Peters and Robert H. Waterman Jr. – Harper Collins – (1982)
- 10 BUILT TO LAST: Successful habits of Visionary Companies – Jim Collins and Jerry I. Porras- Collins Business – (1994)
- 11 CREATIVE DESTRUCTION: Why Companies that are Built to last Underperform the Market-And How to Successfully Transform Them – Richard Foster and Sarah Kaplan – Doubleday Business- (2001)
- 12 FUNDING FERTILE GROUND: Identifying Extra – Ordinary Opportunities for New Ventures - Scot A. Shane – Wharton School Publishing - (2004)
- 13 THE FORTUNE AT THE BOTTOM OF THE PYRADID. Eradicating Poverty Through Profits – C. K. Prahalad – Wharton School Publishing (2005)
- 14 BLUE OCEAN STRATEGY – W. Chen Kim and Renee Mauborgne – Harvard Business School Publishing – (2005)
- 15 BOTTOM OF THE PYRAMID MARKETS: Concepts and Cases – Ed. S. Rajagopalan – ICFAI Books the ICFAI University Press – (2006)

Recent Advances in Computer Applications – Paper-II

Ph.D. Coursework

UNIT-I:

ALGORITHM DESIGN PATTERN

Introduction, Fundamentals of the analysis of algorithm efficiency, Brute force, Divide-and - conquer, Decrease-and-conquer, Transform-and-conquer, Space and time tradeoffs, Dynamic programming, Greedy Technique, Iterative improvement. **- 12 Hours**

UNIT-II:

SOFT COMPUTING

Knowledge representation, graph search algorithm, fuzzy logic, Rough set Theory, neural networks, semantic algorithm, decision tree, clustering methods, Genetic algorithm. **– 12 Hours**

UNIT-III:

CLOUD COMPUTING

Introduction to Cloud Computing including benefits, challenges, and risks, Cloud Computing Models including Infrastructure/Platform/Software – as-a-service, public cloud, private cloud, and hybrid clouds. **- 12 Hours**

UNIT-IV:

INTRODUCTION TO BIG DATA

Introduction to Big Data Platform – Challenges of Conventional Systems - Intelligent data analysis – Nature of Data - Analytic Processes and Tools - Analysis vs Reporting - Modern Data Analytic Tools - Statistical Concepts: Sampling Distributions - Re-Sampling - Statistical Inference - Prediction Error. **- 15 Hours**

UNIT-V:

MACHINE LEARNING USING R

Exploratory Data Analysis, Data Visualization using R, Data Exploration, Understanding the Business Problem, Preprocessing the Data, Using Modeling Techniques and Algorithms, Evaluating the Model, presenting a Management Report and Review, Deploying the Model. **- 12 Hours**

Reference Books:

1. "Introduction to the design and analysis of algorithms" - Anaay Levitin (pearson Education Publication)
2. Pattern Recognition Techniques and Applications- Rajjan Shinghal (Oxford University Press)

Research and Publications Ethics (RPE)- Paper-IV Ph.D. Coursework

Course Title:

Research and Publications Ethics (RPE) – Course for awareness about publication ethics and publication misconducts.

Credits: 2

Marks: Total Marks 50: (20 IE+30 UE)

Overview:

This course has a total of 6 units focusing on basics of philosophy of science and ethics, research integrity, publication ethics. Hands –on- sessions are designed to identify research misconduct and predatory publications. Indexing and citation databases, open access publications, research metrics (Citation, h – index, Impact Factor, etc.) and plagiarism tools will be introduced in this course.

Pedagogy:

Classroom teaching, guest lectures, group discussions, and practical sessions.

Particulars	No of Hours
Syllabus in detail (Theory)	
RPE 01: Philosophy and Ethics: 1. Introduction to philosophy: Definition, nature and scope, concept, branches 2. Ethics: Definition, moral philosophy, nature of moral judgment and reactions.	4 hours
RPE 02: Scientific Conduct: 1. Ethics with respect to science and research, Unethical Practices Nearly Identical to research misconduct 2. Intellectual honesty and research integrity 3. Scientific misconducts: Falsification, Fabrication and Plagiarism (FFP), idea, data, method, and text plagiarism 4. Redundant publications: duplicate and overlapping publications, salami slicing 5. Selective reporting and misrepresentation of data.	4 hours
RPE 03: Publication Ethics: 1. Publication Ethics: Definition, introduction and importance, citations styles, objectivity, relevance, and transparency of the paper 2. Best Practices/ standards settings initiatives and guidelines: COPE, WAME, etc 3. Conflicts of interest with copyrights and patents	7 hours

<p>4. Publication misconduct: Definition, concept, problems that lead to unethical behavior and vice versa, types</p> <p>5. Violation of publication ethics, authorship and contributorship</p> <p>6. Dominant laws regarding research ethics</p> <p>7. Infringement and enforcement of Copyright and Patents</p>	
Practical	
<p>RPE 04: Open Access Publishing:</p> <p>1. Open Access Publications and Initiatives</p> <p>2. SHERPA/ RoMEO online resource to check publisher copyright and self – archiving policies</p> <p>3. Software tool to identify predatory publications developed by SPPU</p> <p>4. Journal finder/ journal suggestions tools viz JANE, Elsevier Journal Finder, Springer Journal Suggester, etc.</p>	4 hours
<p>RPE 05: Publication Misconduct:</p> <p>A. Group Discussions (2 hrs.)</p> <p>1. Subject specific ethical issues, FFP, authorship</p> <p>2. Conflicts of interest</p> <p>3. Complaints and appeals: examples and fraud from India and abroad</p> <p>4. Peer review process</p> <p>B. Software Tools (2 hrs.)</p> <p>Use of plagiarism software like iThenticate, Urkund, cross check, plagscan, Crossref and other open source software tools.</p>	4 hours
<p>RPE 06: Database and Research Metrics:</p> <p>A. Databases (4 hrs.)</p> <p>1. Indexing databases</p> <p>2. Citation Databases: Web of Science, Scopus, etc.</p> <p>3. Open databases</p> <p>B. Research Metrics (3 hrs.)</p> <p>1. Impact factor of journal as per Journal Citation Report, SNIP, SJR, IPP, Cite Score</p> <p>2. Metrics: h – index, g index, i 10 index, altmetrics.</p>	7 hours

References:

- 1) Bird, A. (2006) Philosophy of Science. Routledge.
- 2) MacIntyre, Alasdair (1967) A Short History of Ethics. London.
- 3) P. Chaddah, (2018) Ethics in Competitive Research: Do not get scooped; do not get plagiarized, ISBN: 978-9387480865
- 4) National Academy of Science. National Academy of Engineering and Institute of Medicine. (2009). On being a scientist: A Guide to Responsible Conduct in Research: Third Edition. National Academies Press.
- 5) Resnik, D.B. (2011). What is ethics in research and why it is important. National Institute of Environmental Health Sciences, 1-10. Retrieved from <https://www.nieths.nih.gov/research/resources/bioethics/whatis/index.cfm>

- 6) Beall, J. (2012). Predatory publishers are corrupting open access. Nature, 489(7415), 179-179.
- 7) <https://doi.org/10.1038/489179a>
- 8) Indian National Science Academy (INSA), Ethics in Science Education, Research and Governance (2019), ISBN: 978-81-939482-1-7.
https://www.insaindia.res.in/pdf/Ethics_Book.pdf

Suggested Readings:

- 1) Resnik, Shamoo: Responsible conduct of Research: Oxford University Press
- 2) Comstock: Research ethics: Cambridge university Press
- 3) Robin: Research ethics: Indiana University press
- 4) Tony Mayer: Promoting Research Integrity in a Global Environment: World Scientific Publishing
- 5) Paul Oliver: The Student's Guide to Research Ethics: Open University Press
- 6) Kambadur Muralidhar, Amit Ghosh Ashok Kumar Singhvi.: Ethics in Science Education, Research and Governance: Indian National Science Academy
- 7) David V Thiel: Research methods for Engineers: Cambridge Press

Note: Latest references with relevant research papers and articles from reputed journals will be added by the teaching faculty during the class

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